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10/524,048	06/08/2005	Michael West	MJW-5066-5	6789
23117 7590 12/16/2008 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			EXAMINER OLSON, ERIC	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



### **Detailed Action**

This office action is a response to applicant's amendment submitted September 22, 2008 wherein claims 1 and 5 are amended and new claim 29 is introduced. This application is a national stage application of PCT/AU03/01008, filed August 8, 2003, which claims priority to foreign application AU2002950658.

Claims 1, 2, and 4-29 are pending in this application.

Claims 1, 2, 4, 5, and 25-29 as amended are examined on the merits herein.

Applicant's amendment, submitted September 22, 2008, with respect to the rejection of instant claims 1, 2, 4, and 5 under 35 USC 112, first paragraph for lacking written description for the proviso that when two of groups R2-R5 are ether they may not be C1-C3 N-alkyl, has been fully considered and found to be persuasive to remove the rejection as the claims have been amended to remove this limitation. Therefore the rejection is withdrawn.

Applicant's amendment, submitted September 22, 2008, with respect to the rejection of instant claims 1, 2, 4, and 25 under 35 USC 103(a) for being obvious over Anderson et al., has been fully considered and found to be persuasive to remove the rejection as the claims do not include compounds having two OR groups where R is an ester moiety. Therefore the rejection is withdrawn.

Applicant's amendment, submitted September 22, 2008, with respect to the rejection of instant claims 1, 2, and 25-27 under 35 the doctrine of obviousness-type double patenting for being obvious over Anderson et al., has been fully considered and found to be persuasive to remove the rejection as the claims have been amended to exclude compounds where R4 and R5 are both OH. Therefore the rejection is withdrawn.

### ***Claim Objections***

Claim 25 is objected to because of the following informalities: The status identifier for this claim identifies it as withdrawn, but it has not been withdrawn by the examiner, and is not drawn to subject matter from a non-elected group. A claim removed by Applicant is considered to be cancelled, not withdrawn from consideration. The status of this claim should be either (previously presented) or (cancelled). Appropriate correction is required.

The following rejections of record in the previous office action are maintained:

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4, 25, 26, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Papageorgiou et al. (PCT international publication WO00/42057, of record in previous action)

Papageorgiou et al. discloses monosaccharide building blocks derived from 5 or 6-carbon pyranose and furanose sugars and aminosugars having an anomeric leaving group that can be a thioalkyl group, and in which the remaining hydroxyl and amino groups are protected by orthogonal protecting groups. (p. 4 lines 14-31) It is noted that the orthogonal classes of protecting groups exemplified by Papageorgiou et al. include amino protecting groups such as dichlorophthaloyl and pentenyl that fall within the limits of N(Y)Z in instant claim 1, reduction sensitive OH-protecting groups such as trifluoromethyl and trichloromethoxymethyl, base-sensitive protecting groups such as ethoxyethyl and cyanoethyl, hydrogenation-sensitive groups such as naphthylmethyl and substituted naphthylmethyl, (group Y17 in claim 26) photolabile protecting groups such as o-nitrobenzyl, (group Y23 in claim 26) and relay deprotection labile groups such as methylthiorthyl, acyloxybenzyl, and benzylthioethyl. (pp. 6-7) Papageorgiou et al. also includes examples wherein a protected 2-amino-2-deoxysugar of this generic formula is synthesized by a route that involves intermediates having a combination of protected -OR groups and unprotected -OH groups, just like the instantly claimed partially protected sugars. (p. 14 example 2, compounds 3 and 4, p. 24 example 5 compounds 22 and 23) Note that these examples use a thiomethyl activating group at the C-1 position, just as is recited in instant claim 25, group X1. Papageorgiou et al. additionally discloses that these synthetic building blocks can be used in library-focused

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carbohydrate-related syntheses. Papageorgiou et al. does not specifically exemplify a compound having the specific protecting groups recited in instant claim 1 and also having one or two free hydroxyl groups.

It would have been obvious to one of ordinary skill in the art at the time of the invention to make the compounds of Papageorgiou et al. having hydroxyl and amino protecting groups falling within the limitations of instant claim 1 (for example pentenyl, trifluoromethyl, and o-nitrobenzyl) by a stepwise protection pathway involving an intermediate that has one or two unprotected hydroxyl groups, similar to those practiced in examples 2 and 5 of Papageorgiou et al. One of ordinary skill in the art would have concluded that any of the compounds encompassed by the general structures taught by Papageorgiou et al. could be produced by a variation of the synthetic methods taught by Papageorgiou et al. One of ordinary skill in the art would have been motivated to use the thiomethyl anomeric leaving group in position R1 because this group is specifically exemplified in the examples provided by Papageorgiou et al. One of ordinary skill in the art would reasonably have expected success because all of the protecting groups used in the obvious embodiments are explicitly identified by Papageorgiou et al. as being orthogonal protecting groups usable in the compounds and methods described therein.

As regards new claim 29, one of ordinary skill in the art would have been motivated to perform the synthetic methods of Papageorgiou et al. in parallel (e.g. on solid phase beads) to produce a library of different compounds. One of ordinary skill in the art would have been motivated to do so because Papageorgiou et al. already discloses that the compounds and methods can be used in library-directed synthesis.

One of ordinary skill in the art would have reasonably expected success because library-directed synthesis is already known in the prior art.

Therefore the invention taken as a whole is *prima facie* obvious.

Response to Argument: Applicant's arguments, submitted September 22, 2008, with respect to the above ground of rejection, has been fully considered and not found to be persuasive to remove the rejection. Applicant argues that Papageorgiou et al. discloses monosaccharide building blocks having temporary protecting groups while the claimed invention is directed to stable compounds. However, this limitation is found nowhere in the claims. The claims as written are directed to certain compounds having certain chemical structures, and nothing more. The intended use of the compound does not further limit the claims beyond the structural limitations already present. Rather, it is assumed that any compound falling within the claimed structure is suitable for Applicant's intended use. Therefore compounds or libraries having an appropriate set of orthogonal protecting groups according to Papageorgiou et al. would fall within the claimed invention.

Applicant further argues that Papageorgiou et al. teaches Benzoyl ester and NH-Dde protecting groups which are excluded from the claimed invention. However, these protecting groups are only a part of the broad selection of orthogonal protecting groups taught by Papageorgiou et al. In fact, Papageorgiou et al. teaches 5 or 6 carbon sugars having various orthogonal protecting groups. The example 4 on p. 14 of Papageorgiou et al. merely serves as a suggestion of a particular carbon skeleton and pattern or protection. the Dde group could be substituted with any of the other NH-protecting

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groups disclosed by Papageorgiou et al. and the p-chlorobenzoyl and TBDPS groups with any pair of orthogonal OH-protecting groups.

Applicant further argues that Papageorgiou et al. does not disclose monosaccharides wherein one of R4 or R5 is hydroxyl. However, the synthetic scheme on p. 14 of Papageorgiou et al. involves the stepwise addition of orthogonal protecting groups to a monosaccharide, going through an intermediate in which R4 is OH. Any of the various sets of orthogonal protecting groups disclosed on pp. 5-7 of Papageorgiou et al. could be added by this method, going through a similar intermediate in which R4 is OH, which would fall within the scope of the claimed invention.

Applicant further argues that Papageorgiou et al. does not make the entire world of protecting groups available to use but merely the subset disclosed to be orthogonal. Although this is true, that subset includes various orthogonal protecting groups falling within the limits of the claimed invention as discussed above. Therefore one of ordinary skill in the art could have made various compounds falling within the claimed invention.

For these reasons the rejection is deemed proper and made **FINAL**.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.



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1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 2, 4, and 25-27 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 14-18 of copending Application No. 11/813737. (pre-grant publication 20080176936, cited in PTO-892 herein referred to as '737) Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 14-18 of '737 anticipate the claimed invention.

Specifically these claims are drawn to pyranose compounds having N(Y)Z, OR, and OH groups as described in instant claims 1, 2, 4, and 5. Specific groups include methoxy, ethoxy, benzyloxy, and phenoxy groups in position R<sub>1</sub> according to instant claim 25, groups such as methyl, ethyl, benzyl, carboxybenzyl, and carboxymethyl in positions R<sub>3</sub> and R<sub>4</sub> falling within the limits of instant claim 26, and groups such as ethyl, phenyl, imidazolyl, piperidine, or aminophenyl falling within the limits of instant claim 27. Therefore claims 14-18 of '737 anticipate the claimed invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Argument: Applicant declines to traverse this rejection and requests that it be held in abeyance. As there are other rejections pending in this application the rejection is maintained and made **FINAL**.

### **Conclusion**

No claims are allowed in this application. **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric S. Olson whose telephone number is 571-272-9051. The examiner can normally be reached on Monday-Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia Anna Jiang can be reached on (571)272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric S Olson/  
Examiner, Art Unit 1623  
12/10/2008

/Shaojia Anna Jiang/  
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